REMARKS/ARGUMENTS

1.) Claim Amendments

The Applicants have cancelled claims 17, 18, 25 and 26, without prejudice, to focus and expedite the prosecution of the pending claims. The Applicants have also amended independent claims 14 and 22 to include the subject matter of dependent claims 16 and 24, respectively, which have also been cancelled. Accordingly, claims 14, 15 and 19-23 remain pending in the application.

2.) Examiner Objections – Specification

The Examiner objected to the application as not including an abstract of the disclosure submitted on a separate sheet, and to a minor informality in the abstract. Although the application is a national stage application filed under 35 U.S.C. §371, which is not subject to the requirements of 37 CFR 1.52(b)(4), the Applicants submit herewith a copy of the abstract, amended to correct the noted typographical error, on a separate sheet.

3.) Claim Rejections – 35 U.S.C. §102(e)

The Examiner rejected claims 14-16, 19, 21, 22, 24 and 25 as being anticipated by Kim, *et al.* (US 2002/0172184 A1). As noted *supra*, the Applicants have amended independent claims 14 and 22 to include the subject matter of dependent claims 16 and 24, respectively, which have been cancelled. The Applicants traverse the rejections.

First, it is to be remembered that anticipation requires that the disclosure of a single piece of prior art reveals **every** element, or limitation, of a claimed invention. Furthermore, the limitations that must be met by an anticipatory reference are those set forth in each statement of function in a claims limitation, and such a limitation cannot be met by an element in a reference that performs a different function, even though it may be part of a device embodying the same general overall concept. Whereas Kim fails to anticipate each and every limitation of claim 14, as amended, that claim is not anticipated thereby.

Claim 14, as amended, recites:

14. A method of communicating consecutive frames of digital data, said method comprising the steps of:

mapping payload data into complex symbols;

interspersing appropriate pilot symbols; and,

mapping symbols on respective sub-channels;

whereby the insertion of a given pilot configuration into the stream of payload data will give rise to a specific output signal being associated with a given PAPR value;

wherein the digital data comprises OFDM modulated signals comprising a first plurality of payload carrying sub-channels and a second plurality of pilot carrying sub channels;

wherein each individual frame of payload data to be transmitted over the payload channels is associated with a given unique pilot configuration chosen from a sub-set of predetermined pilot configurations, each pilot configuration forming a unique pattern of predetermined pilot symbols and transmitted;

wherein, prior to the transmission of at least one given frame of payload data, each pilot configuration of the sub-set is evaluated with regard to PAPR for the associated frame of payload data, whereby the pilot configuration being associated with the lowest PAPR value is chosen for transmission; and,

wherein a control word indicative of the pilot configuration associated with a subsequent frame or a particular frame of a subsequent given order number is inserted into the frame and coded on a predetermined payload channel. (emphasis added)

The Examiner asserted that Kim discloses the limitations of claim 16, now incorporated into claim 14, as corresponding to elements 210-217 of Figure 2, and the teachings of paragraphs 0008-0010, 0021 and 0054-0056. The Applicants have reviewed those portions of Kim, as well as the complete specification thereof, and disagree with the Examiner's assertion.

Paragraphs 0008 - 0010 generally describe what Kim deems to be prior art, while paragraph 0021 describes "a scrambling code generator for generating a predetermined number of scrambling codes for scrambling the input sub-channel data blocks." Paragraphs 0054 - 0056 describe a convolutional encoder, a sub-channel repeater, and a pilot adder. With respect to elements 210-217 of Figure 2, Kim states in paragraphs 0056-0057 that:

[0056] The sub-channel repeated signals are provided to a pilot adder 210. The pilot adder 210, under the control of a pilot controller 211, adds pilot sub-channels to the signals output from the sub-channel repeater 207, and provides its output to a sub-channel assignor 212. The sub-channel assignor 212, under the control of a sub-channel assignment controller 213, receives the signals output from the pilot adder 210 and dynamically adaptively assigns the OFDM sub-channels by varying the sub-channels according to the set time or the service type, rather than statically assigning the sub-channels. The sub-channel assignment controller 213 controls the dynamic/adaptive sub-channel assignment according to the channel condition, using the channel information 209. A detailed description of the sub-channel assignor 212 and the sub-channel assignment controller 213 will be made later with reference to FIGS. 12A to 13.

[0057] The sub-channel signals output from the sub-channel assignor 212 are provided to a sub-channel mapper 214. The sub-channel mapper 214, under the control of a mapping controller 215, performs mapping for modulation of the respective sub-channels according to a modulation mode determined based on a data rate, and provides the mapped signals to a sub-channel scrambler 216. Here, the signal mapping may be performed according to BPSK, QPSK, 16QAM or 64QAM modulation. The sub-channel scrambler 216 scrambles the signals output from the sub-channel mapper 214 with a scrambling code generated by a scrambling code controller 217, and provides the scrambled signals to an inverse fast Fourier transformer (IFFT) 218. Here, the sub-channel scrambler 216 and the scrambling code controller 217 scramble each OFDM symbol data block by several scrambling codes, rather than simply scrambling the sub-channels, and then provide the scrambled data blocks to the IFFT 218.

There is no teaching in those portions of Kim, much less the remainder of that document, of "[inserting] a control word indicative of the pilot configuration associated with a subsequent frame or a particular frame of a subsequent given order number . . . into [a] frame and coded on a predetermined payload channel," as recited in the limitations of claim 16, now incorporated in claim 14. Therefore, Kim fails to anticipate claim 14. Whereas claim 22, as amended to include the limitations of claim 24, recites analogous limitations, it is also not anticipated by Kim. Furthermore, whereas claims 15, 19 and 21 are dependent from claim 14, and include the limitations thereof, they are also not anticipated by Kim.

4.)   Claim Rejections – 35 U.S.C. §103(a)

The Examiner also rejected claims 19 and 26 as being obvious over Kim; claim 15 as being obvious over Kim in view of Stevenson (US 6,209,112); claim 23 as being obvious over Kim in view of Khandani, *et al.* (US 2004/0093545 A1); and claim 20 as being obvious over Kim and Stevenson and further in view of Khandani. Claim 26 has been cancelled and, therefore, the Examiner's rejection thereof is now moot. The Applicants traverse the rejections of claims 15, 19, 20 and 23.

As noted *supra*, the Applicants have amended independent claims 14 and 22 to include the subject matter of dependent claims 16 and 24, respectively, and claims 14 and 22 have been shown to be novel over the teachings of Kim. The Examiner has not pointed to any teachings in Kim, Stevenson or Khandani that would render claims 14 or 22 obvious. Therefore, whereas claims 15, 19 and 20 are dependent from claim 14 and claim 23 is dependent from claim 22, and include the limitations of their respective base claims, those claims are also not obvious over Kim, or either alone or in combination with the teachings of Stevenson or Khandani.

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CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 14, 15 and 19-23.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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